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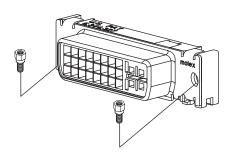
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Jameco Part Number 1933881

MicroCross™ DVI-A Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
74320-3008	30μ" Gold	V
<u>74320-3009</u>	Gold Flash	Yes

Please contact Molex for additional tail length options

Features and Benefits

- Supports analog signal and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface compliant
- The MicroCross coaxial section supports a high bandwidth up to 2.5 GHz analog signal
- Selectively loaded circuits reduce cost

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

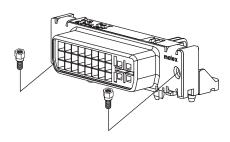
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall

Operating Temperature: -20 to +85°C

MicroCross™ DVI-A Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-free
<u>74320-1008</u>	30μ" Gold	Yes
<u>74320-1009</u>	Gold Flash	ies

Please contact Molex for additional tail length options

Features and Benefits

- Supports analog signal and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface compliant
- The MicroCross coaxial section supports a high bandwidth up to 2.5 GHz analog signal
- Selectively loaded circuits reduce cost

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

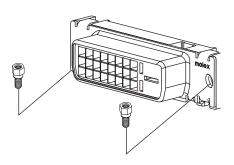
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall



MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
<u>74320-5000</u>	30μ" Gold	Yes
<u>74320-5004</u>	Gold Flash	tes

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: Versions of 88741, 74323 and other

plug components Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1,000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

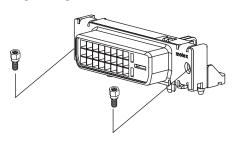
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall

Operating Temperature: -20 to +85°C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-Free
<u>74320-4000</u>	30μ" Gold	V
<u>74320-4004</u>	Gold Flash	Yes

Please contact Molex for additional tail length options

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates With: Versions of 88741, 74323 and other

plug components Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

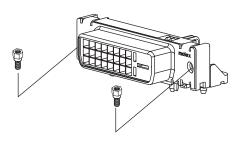
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall



MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle ATX with Forklocks



Order No.	Plating	Lead-free
<u>74320-9000</u>	30μ" Gold	Yes
<u>74320-9004</u>	Gold Flash	res

Please contact Molex for additional tail length options

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps performance over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: Versions of 88741, 74323 and other

plug components Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1,000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

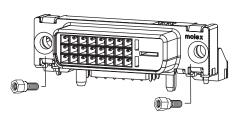
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall

Operating Temperature: -20 to +85°C

MicroCross™ DVI-D Digital Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Extended Height Right Angle



Order No.	Plating	Lead-free
<u>74320-2010</u>	Gold Flash	Vos
<u>74320-2011</u>	30μ" Gold	Yes

Please contact Molex for additional tail length options

Features and Benefits

- Supports digital signals and offers excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- Supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link implementation
- Narrow key slot for polarization

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: Versions of 88741, 74323 and other

plug components Designed in: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb min. Insertion Force to PCB: 10 lb max. Mating Force: 10 lb max. Unmating Force: 2.2 lb min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

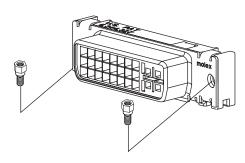
Plating: Contact —30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall



MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Vertical



Order No.	Plating	Lead-free
<u>74320-3000</u>	30μ" Gold	Voc
<u>74320-3004</u>	Gold Flash	Yes

Please contact Molex for additional tail length options

Features and Benefits

- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link.
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

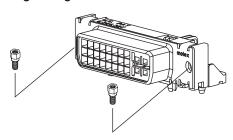
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall

Operating Temperature: -20 to +85°C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle



Order No.	Plating	Lead-free
<u>74320-1000</u>	30μ" Gold	Vac
<u>74320-1004</u>	Gold Flash	Yes
<u>/4320-1004</u>	Gold Hash	

Please contact Molex for additional tail length options

Features and Benefits

- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link.
- The MicroCross coax section supports a high-bandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates With: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

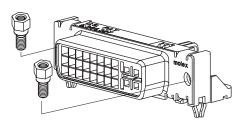
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall



MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount Through Hole Right Angle with Forklocks



Order No.	Plating	Lead-free
<u>74320-9010</u>	30μ" Gold	V
<u>74320-9014</u>	Gold Flash	Yes

Please contact Molex for additional tail length options

Features and Benefits

- Supports both analog and digital signals
- Excellent EMI/RFI performance
- Plug and play interface
- LFHTM contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link
- The MicroCross coax section supports a highbandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates with: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

> Contact Resistance: 20 milliohms max. Dielectric Withstanding Voltage: 500V Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb. min. Insertion Force to PCB: 10 lb. max. Mating Force: 10 lb. max. Unmating Force: 2.2 lb. min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

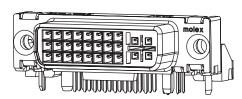
Plating: Contact—30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall

Operating Temperature: -20 to +85°C

MicroCross™ DVI-I Digital/Analog Visual Interface Receptacle Header and Hardware

74320

Panel Mount, Through Hole, Extended Height Right Angle



Order No.	Plating	Lead-free
<u>74320-2020</u>	Gold Flash	V
<u>74320-2021</u>	30μ" Gold	Yes

Contact Molex for additional tail length options.

Features and Benefits

- Supports both analog and digital signals
- Plug and play interface
- Excellent EMI/RFI performance
- LFH[™] contact design is rugged and reliable
- DDWG DVI standard interface
- The digital section supports 4.95 Gbps over a single link and 9.9 Gbps over a dual link
- The MicroCross coax section supports a highbandwidth of up to 2.5 GHz analog signal

Reference Information

Product Specification: PS-74320-001

Packaging: Tray UL File No.: E29179 CSA File No.: LR19980

Mates With: 88741, 74323 and other plug components

Designed In: Inches

Electrical

Voltage: 40V Current: 3.0A

Contact Resistance: 20 milliohms max.
Dielectric Withstanding Voltage: 500V
Insulation Resistance: 1000 Megohms min.

Mechanical

Contact Retention to Housing: 1 lb min. Insertion Force to PCB: 10 lb max. Mating Force: 10 lb max. Unmating Force: 2.2 lb min. Durability: 100 cycles

Physical

Housing: Glass-filled thermoplastic, UL 94V-0

Contact: Copper Alloy

Plating: Contact — 30µ" Gold or Gold flash in contact area and 100µ" or 150µ" Tin in tail area over Nickel overall Shields—100µ" bright Tin over Copper overall







LANGUAGE ENGLISH

1.0 Scope

This specification covers the Molex MicroCrossTM - Digital Visual Interface (DVI) system which includes cable plugs and board mount receptacles (Right Angle and Vertical).

The Digital Visual Interface connector system supports both analog and digital video transmission.

This specification covers the DVI cable to board, I/O connector system with requirements as set forth by Molex Incorporated.

2.0 Product Description

The MicroCross™ DVI system is designed to meet the industry's requirements for analog and digital computer monitors. There are (2) different receptacle connectors which correspond to the video support present on the host system (mother board/graphics cards). The DVI-D (Digital) receptacle connector supports hosts systems that transmit digital video. The DVI-I (Intergrated) receptacle connector supports host systems that are enabled to transmit both analog and digital video. This is achieved by utilizing two different sets of contacts as shown in Figure 1 below:

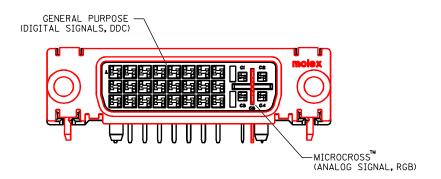


Figure 1: Two sets of contacts (DVI-I Shown)

	REV	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J		
	SHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
REVISE ON PC ONLY							TIT	TITLE MicroCross TM - DVI												
	REVISED J PER EC# T2003-0134 TONY ZHANG 02/11/22							I/O Plug and Receptacle Connector System												
		10111 211/110 02/11/22					THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO													
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1. General purpose signals:

Terminals: 24 circuits on a 0.075 inch/1.91 mm grid

Signals: Includes power, grounds, digital and video signals, analog synch lines and DDC

(Display Data Channel) signals.

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2-	9	T.M.D.S. Data1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data2/4 Shield	11	T.M.D.S. Data 1/3	19	T.M.D.S. Data 0/5
			Shield		Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. 3+	21	T.M.D.S. Data 5+
6	DDC Clock	14	+5 V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock-

Table 1: Digital-Only Connector Pin Assignments
Source: Digital Visual Interface Specification, Revision 1.0

2. MicroCrossTM:

a) Plug and Receptacle - I - Intergrated analog/digital - see figure 3, sheet 4 Terminals: 4 circuits on a 0.100 inch/2.54 mm grid with a crossing ground plane in between.

Signals: High frequency, 75 ohm, analog video

b) Plug and Receptacle - D - Digital Version

Terminals: A single key on the plug and corresponding slot on the receptacle.

Signals: The key is used for mechanical polarization only, it does not carry any

electrical signals.

	REVISE ON PC ONLY		TITLE MiroCross TM - DVI					
	J	SEE SHEET 1	I/O Plug and Receptacle Connector System					
			THIS DOCUMENT CO	NTAINS INFORMAT	TION T	HAT IS PROPRIETAR	′ TO	
	REV	DESCRIPTION	MOLEX INC. AND SHOU	JLD NOT BE USED	WITH	OUT WRITTEN PERMIS	SSION	
DOC	CUMENT	NO.				FILE NAME	SHEET	
		PS-74320-001				PS74320.LWP	2	
		ES-40000-3996 REV. A SH	HEET 4 95/MAR/10	EC U5-0926	DC	BRD03.SAM		





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Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data 2-	9	T.M.D.S. Data 1-		T.M.D.S. Data 0-
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+		T.M.D.S. Data 5+
6	DDC Clock	14	+5V Power		T.M.D.S. Clock Shield
7	DDC Data	15	Ground		T.M.D.S. Clock+
			(return for +5V, HSync,		
			and VSync)		
8	Analog Vertical Sync	16	Hot Plug Detect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	5 Analog Ground		
	-		(analog R, G, & B return)		

Table 2: Combined Analog and Digital Connector Pin Assignments
Source: Digital Visual Interface, Revision 1.0

Additional general specifications are:

Plug:

- -LFH (Low Force Helix) style contacts
- -fully shielded RFI/EMI can
- -grounding detents on mating shell
- -solder tails for cable termination
- -positive retention jackscrew: thread 4-40 UNC-2A

Receptacle:

- -high cycle, dual beam, LFH shrouded contacts
- -polarization achieved by a "D" shaped housing/shield
- -single piece shield with integral ground leg
- -shield protrudes for ESD considerations
- -solder tails for thru hole board mount
- -plastic retention pegs
- -jackposts: # 4-40 UNC-2A&B threads. The recommended application torque setting is
- 4 lbf in maximum. To prevent stripping the shield threads while installing the jackposts, it is recommended the jackposts are started by hand or with a lower initial torque driver setting. The engaged threads are rated to hold a minimum of 5 lbf in of torque.

	REVISE ON PC ONLY		TITLE MiroCross™ - DVI				
	J	SEE SHEET 1	I/O Plug and Receptacle Connector System				
			THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO				/ TO
	REV	DESCRIPTION	MOLEX INC. AND SHOU	JLD NOT BE USED	WITH	OUT WRITTEN PERMI	SSION
DOC	CUMENT	NO.				FILE NAME	SHEET
		PS-74320-001				PS74320.LWP	3
		ES-40000-3996 REV. A SH	HEET 4 95/MAR/10	EC U5-0926	DC	BRD03.SAM	



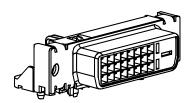


LANGUAGE ENGLISH

2.1 Product Drawing Numbers

2.1.1 Receptacle:

The DVI receptacle is for systems which support digital video (DVI-D) or both analog and digital video (DVI-I).



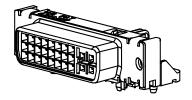


Figure 2: Right Angle DVI-D version (Digital)

Figure 3: Right Angle DVI-I version Intergrated(Analog/Digital)



Figure 4: Jackpost

	REVISE ON PC ONLY		TITLE MiroCross™ - DVI						
	J	SEE SHEET 1	I/O Plug and Receptacle Connector System						
			THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO						
	REV	DESCRIPTION	MOLEX INC. AND	SHOU	ILD NOT BE USED	WITH	OUT WRITTEN PERMI	SSION	
DOC	CUMENT	NO.					FILE NAME	SHEET	Т
		PS-74320-001					PS74320.LWP	4	
		ES-40000-3996 REV. A SH	HEET 4 95/MAI	R/10	EC U5-0926	DC	BRD03.SAM		





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2.1.2 DVI Plug

The DVI plug is for systems which use analog or digital video. The analog DVI plug shown below supports analog video transmission from the host to the display.

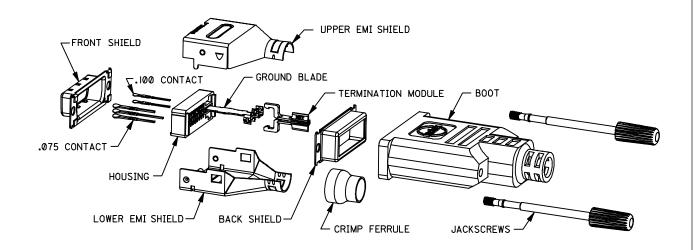


Figure 5: Analog Version

	REVISE ON PC ONLY		TITLE	TITLE MiroCross™ - DVI					
	J	J SEE SHEET 1		I/O Plug and Receptacle Connector System					
			THIS DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO				/ TO		
	REV	DESCRIPTION	MOLEX	INC. AND SHOU	LD NOT BE USED	WITH	OUT WRITTEN PERMI	SSION	
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		PS-74320-001					PS74320.LWP	5	
		ES-40000-3996 REV. A SH	HEET 4	95/MAR/10	EC U5-0926	DC	BRD03.SAM		





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2.1.3

The digital DVI plug shown below supports digital video tr ansmission from the host to the display.

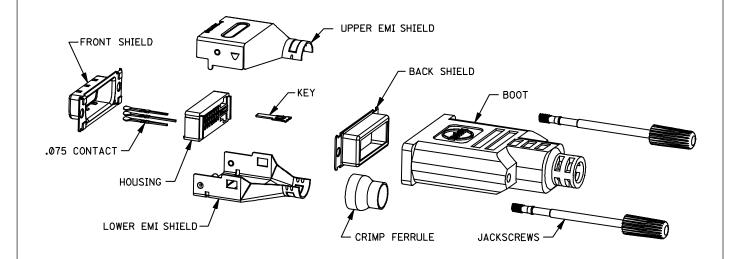


Figure 6: Digital Version

2.2 Safety Agency Approvals

UL File Number E29179, Volume 10, Section 12

CSA File Number LR19980

3.0 Applicable Documents and Specifications

- 3.1 All documents referenced shall be of the latest revision. The order of precedence detailing requirements of this specification is as follows:
 - 1. Product Drawings 2. This specification

3.2 Reference Documents

3.2.1 EIA RS-364-(06,09,13,17,18,20,21,23,27,28,31,32,41,46,65,67,70,90) Electronic Industries Association, Recommended Standard

	REVISE ON PC ONLY		TITLE MiroCross™ - DVI				
	J	SEE SHEET 1	I/O Plug and Receptacle Connector System				
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- 3.2.2 IEC-801-2 International Electrotechnical Commission, Electrostatic Discharge Requirements
- 3.2.3 MIL STD-202: Test methods for electronics and electrical component parts
- 3.2.4 Molex PS-74320-9999 Application Specification, DVI Plug Cable Assembly
- 3.2.5 Molex ES-74320-9998 Termination Specification, DVI Cable Assemblies
- 3.2.6 Molex PS-74320-9997 Cable Assembly Specification
- 3.2.7 UL 94: Tests for flammability of plastics materials

4.0 Ratings

4.1 Voltage

40 Volts AC (RMS)

4.2 Current

3.0 Amps per circuit.

30 °C maximum temperature rise and 55 °C maximum ambient per EIA-364-70.

4.3 Temperature

Operating: -20 °C to +85 °C Nonoperating: -20 °C to +85 °C

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5.0 Performance

5.1 Electrical Performance

ITEM	TEST CONDITION	REQUIREMENT
Contact Resistance	Bulk resistance measured between plug solder tails and receptacle solder tails per ANSI/EIA-364-23	20 milliohm maximum, initial per contact mated pair 10 milliohm maximum change from initial reading per contact mated pair
Shell Resistance Bulk resistance measured between ground leg on receptacle shield and the plug cable braid. Test current=100mA; Test voltage=5 Volts DC open circuit maximum per ANSI/EIA-364-06A-83		50 milliohm maximum initial 50 milliohm maximum change from initial reading
Insulation Resistance Test voltage = 500 Volts DC +/- 50 V Unmated and Unmounted per ANSI/EIA 364-21, Method C		1Gigaohm Minimum between adjacent contacts and contacts and shell
Dielectric Withstanding Voltage Test voltage = 500 Volts DC +/-50 Unmated and Unmounted per ANSI/EIA 364-20, Method 0 Barometric pressure of 15 psi		No flashover, No sparkover, No excess leakage, No Breakdown
Contact Current Rating Maximum ambient = 55 degree C Maximum temperature change = 85 degree C per ANSI/EIA-364-70, TP-70		3.0 A maximum
Applied Voltage Rating		40 Volts AC (rms) continuous maximum, on any signal pin with respect to the shield
Electrostatic Discharge	Test unmated from 1 kV to 8kV in 1 kV steps using 8mm ball prob per IEC 801-2 Contact discharge to shell Air discharge perpendicular to shell Air discharge at angle to shell	No evidence of discharge to contacts at 8kV. Discharge to the shell is acceptable.
T.M.D.S. Signals Time Domain Impedance	Risetime = 330 pS (10%-90%) S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle connector mounted on a controlled impendance pcb fixture per ANSI/EIA-364-108 draft Proposal	100 ohms +/-15%

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T.M.D.S. Signals Time Domain Crosstalk: FEXT	Risetime = 330 pS (10%-90%) S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle and the load side plug connector are mounted on a controlled impedance pcb fixture (1) Driven pair and (1) victim pair per ANSI/EIA-364-90 Draft Proposal	5% Maximum
T.M.D.S. Signals Rise Time Degradation	S:G ratio per DVI pin designation Differential Measurement Specimen Environment Impedance = 100 ohm differential Source-side receptacle and the load side plug connector are mounted on a controlled impedance pcb fixture per ANSI/EIA-364-102 Draft Proposal	160 pS Maximum (Note: Converted bandwidth using BW=0.35/t rise yields 2.2 GHz)
Analog RGB Coaxial Signals Time Domain Impedance	Risetime = 700 pS (10%-90%) S:G ratio per DVI pin designation Single-ended Measurement Specimen Enviroment Impedance = 75 ohm single-ended Source-side receptacle connector mounted on a controlled impedence pcb fixture per ANSI/EIA-364-108 Draft Proposal	75 ohms +/-10%
Analog RGB Coaxial Signals Time Domain Crosstalk: (FEXT)	Risetime = 700 pS (10%-90%) S:G ratio per DVI pin designation Single-ended Measurement Specimen Enviroment Impedance = 75 ohm single-ended Source-side receptacle connector is mounted on a controlled impedance pcb fixture and the load side plug connector is terminated to semi-rigid coax. (1) Driven line and (1) victim line per ANSI/EIA-364-90 Draft Proposal	3% Maximum
Analog RGB Coaxial Signals Rise Time Degradation	S:G ratio per DVI pin designation Single-ended Measurement Specimen Environment Impedance = 75 ohm single-ended Source-side receptacle connector is mounted on a controlled impedance pcb fixture and the load side plug connector is terminated to semi-rigid coax. per ANSI/EIA-364-102	140pS Maximum (Note: Converted bandwidth using BW=0.35/t rise yields 2.5 GHz)

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5.2 Mechanical Performance

ITEM	TEST CONDITION	REQUIREMENT				
Mating Force	One pair per ANSI/EIA 364-13 Insertion speed: 1inch (25mm) per minute	10.0 lbf (4.5 kgf) maximum				
Unmating Force	Mated pair per ANSI/EIA 364-13 Withdraw speed: 1inch (25mm) per minute	2.2 lbf (1.0 kgf) minimum 8.8 lbf (4.0 kgf) maximum				
Receptacle Contact Retention	Individual contact	1.0 lbf (0.45 kgf) minimum				
Receptacle Key Retention	Individual key	2.0 lbf (0.90 kgf) minimum				
Plug Contact Retention	Push out from mating face; Individual contact	10 lbf (4.5 kgf) minimum				
Plug Key Retention	Push out from mating face; Individual key	10 lbf (4.5 kgf) minimum				
Durability	Automatic cycling: 100 cycles per ANSI/EIA 364-09 at 100 +/- 50 cycles per hour	Contact Resistance per EIA 364-23: 10 milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: 50 milliohm maximum (change from initial reading)				
Vibration	15 minutes / axis per ANSI/EIA 364-28, Method 5A	No discontinuities at 1 microsecond or longer (each contact) when continuity is tested per EIA-364-46				
Shock (Mechanical)	Per ANSI/EIA 364-27, Condition A (specified pulse)	No discontinuities at 1 microsecond or longer (each contact) when continuity is tested per EIA-364-46				
Cable Pullout Force	Test for cable strain relief & termination intergrity. Cable subjected to 25.0 lbf (11.3 kgf) static load for one minute while monitoring continuity. Isolate plug & receptacle interface from load.	No discontinuities greater than 1 microsecond				
Board Insertion Force		10.0 lbf (4.5 kgf) maximum				
Cable Flex	100 cycles in each of 2 planes Dimension X=3.7x Cable Diameter per ANSI/EIA 364-41, Condition I	No discontinuities greater than 1 microsecond allowed during flexing on contacts or shields per EIA-364-46 Dielectric Withstanding Voltage and Insulation Resistance tested per requirements of section 5.1				
Normal Force	For reference only	.050" pitch terminals: 75 grams typical 90 grams typical 100 grams typical				
Thread Torque	Mounted to panel; Test to failure; Tighten jackposts with torque gage until threads are stripped and jackpost turns freely	5.0 lbf in (5.76 kgf cm) minimum				

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LANGUAGE ENGLISH

5.3 Environmental Performance

ITEM	TEST CONDITION	REQUIREMENT
Thermal Shock	10 cycles Mated/Unmated per ANSI/EIA 364-32, Condition I	Contact Resistance: 10 milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: 50 milliohm maximum change from initial per EIA-364-23
Humidity (Cyclic)	ANSI/EIA 364-31, Conditions A and B Method III, omit 7A and 7B	Contact Resistance: 10 milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: 50 milliohm maximum change from initial per EIA-364-23
Thermal Aging	105 °C for 250 hours Mated per ANSI/EIA 364-17, Condition 4, Method A.	Contact Resistance: 10 milliohm maximum change from initial per contact pair All samples to be mated Shell Resistance: 50 milliohm maximum change from initial per contact pair per EIA-364-23
Temperature Rise	Per ANSI/EIA 364-70	30 °C maximum temperature rise
Resistance to Solder Heat	Dip connector solder tails to board for 10 seconds Solder Temp = 260 +/- 5 °C	No visual damage to insulator
Solderability	Per MIL-STD-202, Method 208	95% minimum coverage
Temperature Rating	Operating	-20 degree C to +85 degree C
Temperature Rating	Non-Operating	-20 degree C to +85 degree C

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- 6.0 Packaging
 - 6.1 Receptacles:

All receptacles are packaged in trays. For specific packaging information, refer to PK-74320-001 for right angle receptacles and PK-74320-002 for vertical receptacles.

- 7.0 Other Information
 - 7.1 Test Sequences

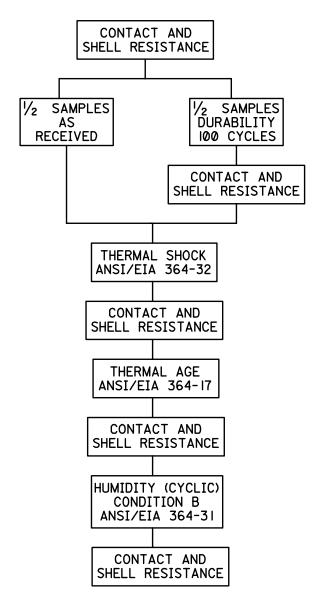
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PS-74320-001					PS74320.LWP	12	
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LANGUAGE ENGLISH

Group 1: Mated Environmental



Number of samples

- (5) Receptacle assembled to printed circuit board.
- (5) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long

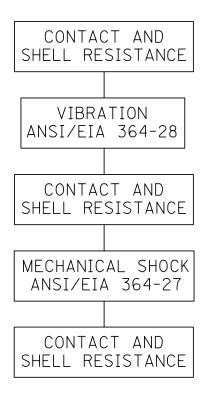
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Group 2: Mated Mechanical



Number of Samples:

- (2) Receptacles, assembled to printed circuit board.
- (2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long.

<u>Note:</u> Connector is to be mounted on a fixture that simulates the typical application. The receptacle connector shall be mounted to a panel, per the receptacle panel cutout shown in Figure 12, which is permanently affixed to the fixture. The plug shall be mated to the receptacle with jackscrews fully engaged and the other end of the cable shall be permanently clamped to the fixture, 3 inches from connector face.

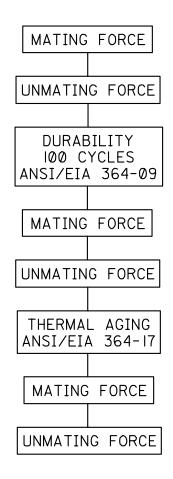
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LANGUAGE ENGLISH

Group 3: Mated Mechanical



Number of Samples:

- (2) Receptacles, assembled to printed circuit board.
- (2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long.

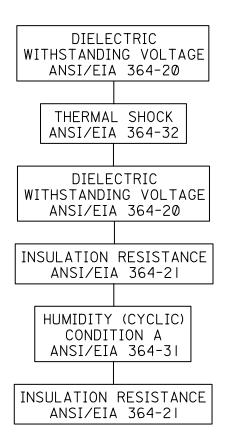
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LANGUAGE ENGLISH

Group 4: Insulator Intergrity



Number of Samples:

- (2) Receptacles, assembled to printed circuit board.
- (2) Cable assemblies with a plug assembled to one end, 10 inch/25.4 cm long

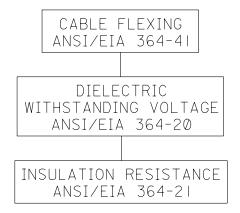
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LANGUAGE ENGLISH

Group 5: Cable Flexing



Number of Samples: (2) Cable assemblies

Group 6: Electrostatic Discharge

ELECTROSTATIC DISCHARGE

Number of Samples: (1) Receptacle connector

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SINGLE LINE MODEL

DVI SINGLE LINE ELECTRICAL MODEL

1.0 PRODUCT

TRADE NAME: DVI / P&D CONNECTOR

SERIES: 74320

2.0 MODEL DESCRIPTION

THIS SINGLE LINE MODEL (SLM) CAN BE USED FOR MOST BASIC ELECTRICAL ANALYSIS. THIS SLM WILL ONLY REPRESENT THE CONNECTOR RESPONSE TO GAUSSIAN WAVEFORMS WITH RISETIMES AT 830 PICOSECONDS AND SLOWER. THIS SLM SHOULD NOT BE USED TO EVALUATE CROSSTALK OR GROUND BOUNCE. THIS SLM CAN BE USED IN SIMULATION PROGRAMS THAT SUPPORT IBIS (INPUT/OUTPUT BUFFER INFORMATION SPECIFICATION) OR SPICE (SIMULATION PROGRAM WITH INTEGRATED CIRCUIT EMPHASIS). FOR ANALYSIS WITH FASTER RISETIME SIMULATIONS, PLEASE CONTACT MOLEX INCORPORATED FOR AVAILABILITY OF A MULTI-LINE MODEL (MLM).

DISCLAIMER: INFORMATION CONTAINED IN THIS DOCUMENT IS SIMULATED. MOLEX INCORPORATED DOES NOT GUARANTEE THIE PERFORMANCE OF THE FINAL PRODUCT TO THE INFORMATION PROVIDED IN THIS DOCUMENT

REVISION:	ECR/ECN INFORMATION: EC No: UDT2002-1335 DATE: 2002 / 05 / 05	SIN	GLE LINE MODEL /I/ P&D CONNECT		1 of 2	
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	REATED / REVISED BY: CHECKED BY: APPROVED		/ED BY:	
SLM-74320-001		CAPADONA	CAPADONA DUNHAM		DUNHAM	
			TEMPLATE FILEN	IAME: PRODUCT SPE	CISIZE AI(V.1).DOC	



SINGLE LINE MODEL

3.0 MODEL INFORMATION

			Lumped			Distributed		
			o	C R			~ Z	t _{pd}
Row	Column	Signal to Ground Ratio ⁽¹⁾ S:G	Inductance L	Capacitance C	Resistance R	Data Source	Impedance $Z = \sqrt{\frac{T}{C}}$	Propagation Delay t _{pd} = √LC
			(nH)	(pF)	(m Ω)		(Ω)	(ps)
С	1	2:1	8.96	2.96	12.0	Т	55.0	162.9
В	6	2:1	6.92	2.58	10.0	Т	51.8	133.6
Α	8	2:1	6.11	2.35	8.0	Т	51.0	119.8

- N/A = Not Applicable due to ground plane (when present).
 E = Empirical (measured); T = Theoretical (mathematical).
 Unmated = No Board Effects.

REVISION:	ECR/ECN INFORMATION:	TITLE:	SINGLE LINE MODEL					
Α	EC No: UDT2002-1335	_	FOR DVI/ P&D CONNECTOR					
	DATE: 2002 / 05 / 05							
DOCUMEN	T NUMBER:	CREATED / REVISED BY:	REATED / REVISED BY: CHECKED BY: APPROVE		/ED BY:			
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